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WATER SUPPLY OUTLOOK FOR MONTANA



U. S. DEPARTMENT of AGRICULTURE ★ SOIL CONSERVATION SERVICE

Collaborating with

MONTANA AGRICULTURAL EXPERIMENT STATION

Data included in this report were obtained by the agencies named above in cooperation with Federal, State and private organizations listed inside the back cover of this report.

AS OF
FEB. 1, 1974

TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

*Cover Photo: Snow Surveyors near Ship Creek,
Alaska snow course.*

SCS PHOTO A-272-11

PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, Western Regional Technical Service Center, Room 209, 511 N. W. Broadway, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	204 E. 5th. Ave., Room 217, Anchorage, Alaska 99501
Arizona	6029 Federal Building, Phoenix, Arizona 85025
Colorado (N. Mex.)	P. O. Box 17107, Denver, Colorado 80217
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 98, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno Nevada 89505
Oregon	1218 S. W. Washington St., Portland, Oregon 97205
Utah	4012 Federal Bldg., 125 South State St., Salt Lake City, Utah 84138
Washington	360 U.S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 2440, Casper, Wyoming 82601

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Water Supply Forecast and Snow Surveys Unit, California Department of Water Resources, P. O. Box 388, Sacramento, California 95802 --- and for British Columbia by the Department of Lands, Forests and Water Resources, Water Resources Service, Parliament Building, Victoria, British Columbia



WATER SUPPLY OUTLOOK FOR MONTANA

and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

Issued by

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ADMINISTRATOR
SOIL CONSERVATION SERVICE
WASHINGTON, D.C.

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MONTANA WATER SUPPLY OUTLOOK
February 1, 1974

* * * * *

* A heavy snowpack west of the Continental Divide,*
* near average in most of the Missouri River *
* drainage, and below average in portions of the *
* Red Rock, Milk, Yellowstone and Big Horn River *
* drainages describes the snow cover conditions *
* over Montana. In some areas the low elevation *
* snowpack was reduced by mild January tempera- *
* tures. Some isolated areas have a heavier *
* snowpack. Lower elevation soils are generally *
* quite wet from recent snowmelt and rainfall *
* that permeated the snowpack. *
*

* Streamflow this spring and summer is expected *
* to be above average in most areas west of the *
* Divide and generally near average in the *
* Missouri River drainage. *
*

* * * * *

COLUMBIA RIVER DRAINAGE

Snow - Nearly all areas have an above average snow cover. The exception is near average in the extreme headwaters of the Clark Fork and Blackfoot Rivers. During January, mild temperatures accompanied by unseasonal rainfall reduced the low elevation snowpack in the valley and foothill areas. Many high elevation watersheds accumulated large amounts of snowfall during this period.

Soils beneath the snowpack are wetter than normal with some areas being near field capacity.

Streamflow - Forecasts for main rivers only are issued this month. Current snowpack and soil moisture conditions indicate most areas can expect above average streamflow this spring and summer.

MISSOURI RIVER DRAINAGE

Snow - With the exception of the Bear Paw Mountains and headwaters of the Red Rock River, snowpack is near average. In some areas the low elevation snow is below average as a result of mild temperatures in January. Some areas have a heavy snowpack at high elevations.

Soils beneath the snowpack at lower elevations are generally wetter than normal, as a result of snowmelt and rainfall.

Streamflow - Forecasts for main rivers issued this month, based on the present snowpack and soil moisture, indicate spring and summer streamflow is expected to be near average in nearly all drainages.

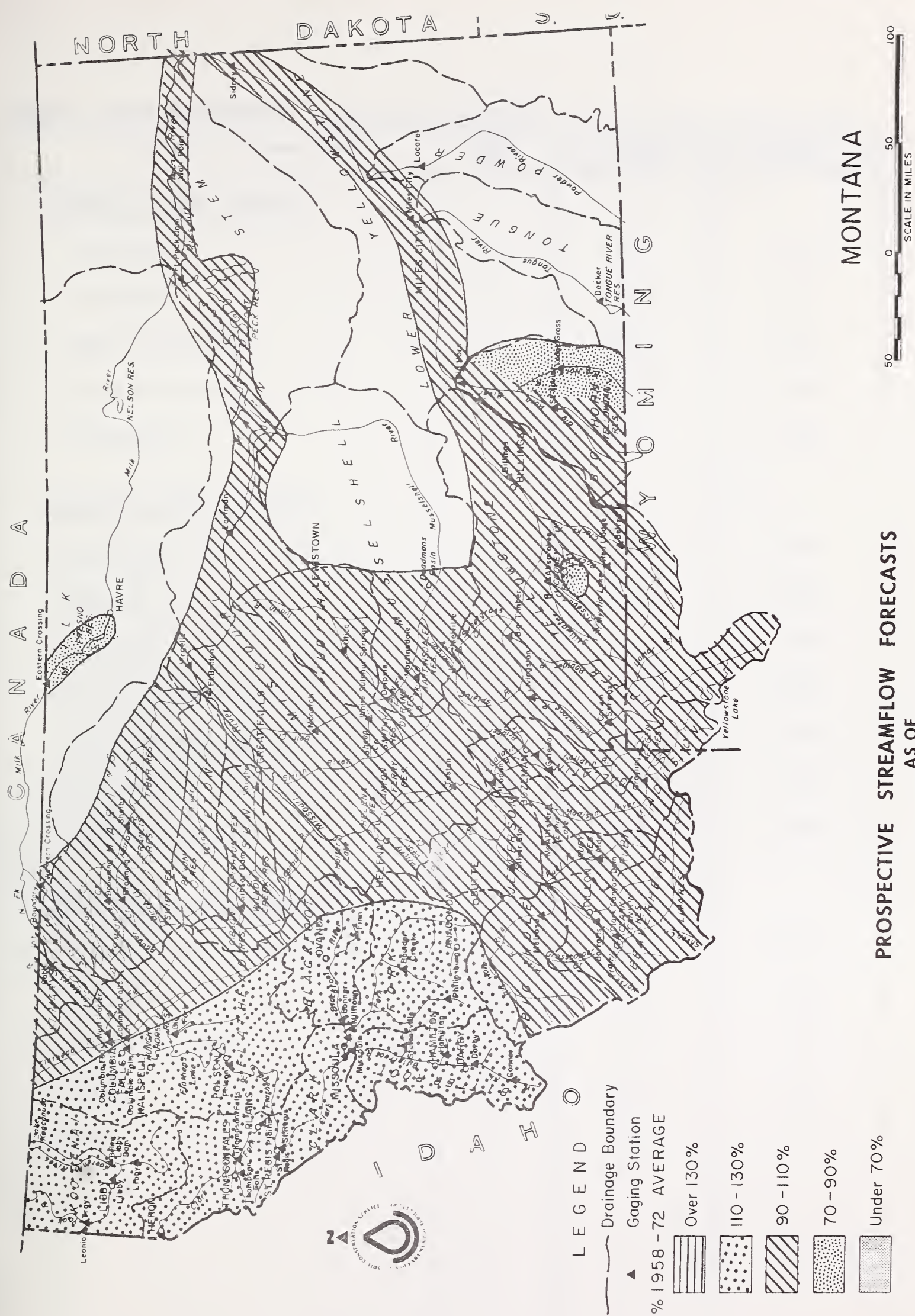
YELLOWSTONE RIVER DRAINAGE

Snow - The upper Yellowstone River drainage has a near average snowpack. The exception is below average conditions along the northwestern slope of the Beartooth Mountains. Snowpack is generally below average on the Big Horn, Tongue and Powder River drainages.

Streamflow - Forecasts based on current snow cover and soil moisture conditions indicate near to a little above average spring and summer runoff from most Yellowstone River tributaries. Unless snowpack improves considerably, low runoff can be expected from the little Big Horn, Powder and Tongue Rivers and Red Lodge Creek.

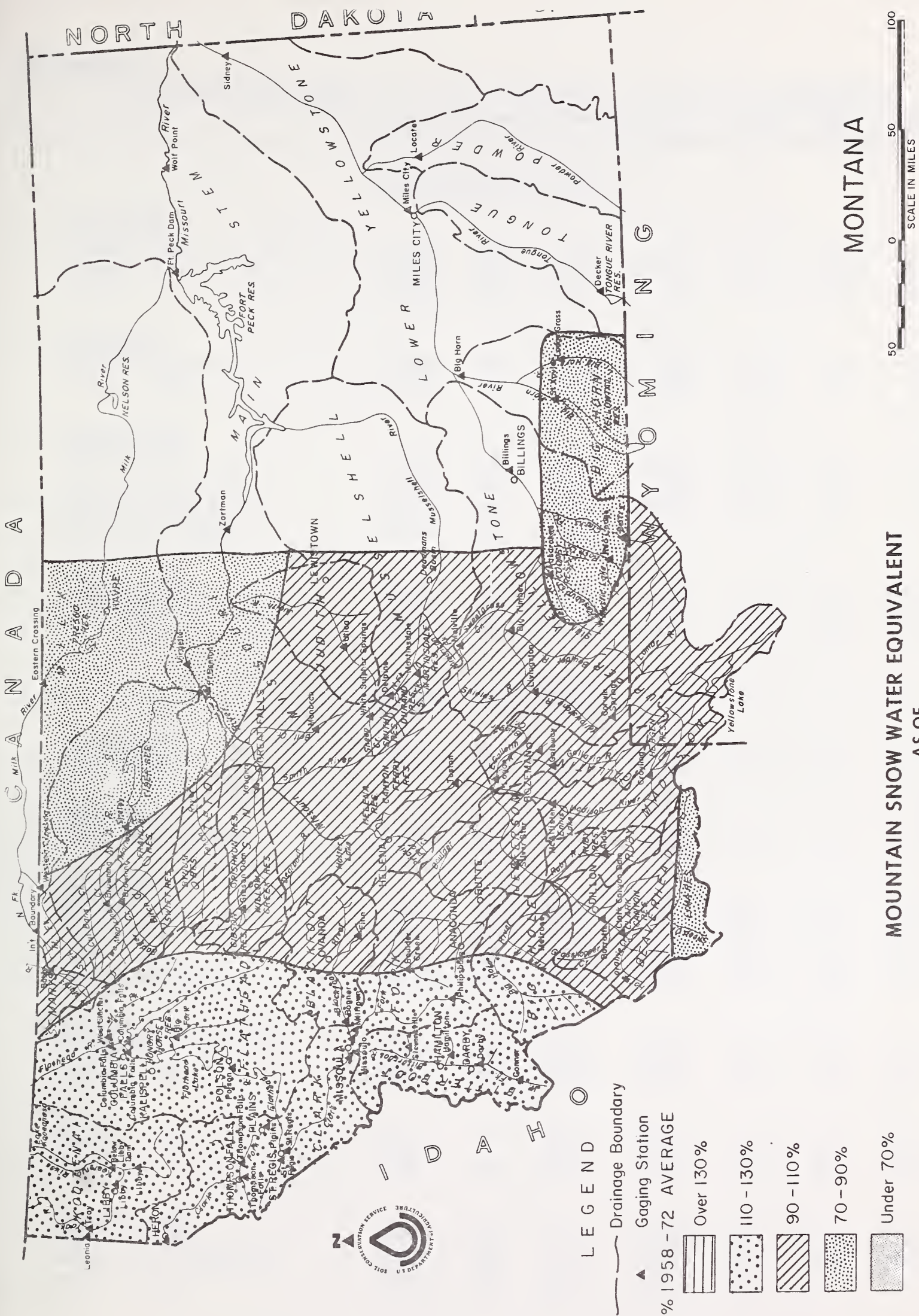
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SUMMARY of SNOW MEASUREMENTS (COMPARISON WITH PREVIOUS YEARS)

RIVER BASIN and/or SUB-WATERSHED	Number of Courses Averaged	THIS YEAR'S SNOW WATER AS PERCENT OF:	
		Last Year	Average
<u>COLUMBIA RIVER DRAINAGE</u>			
Kootenai	8	147	117
Flathead	7	171	117
Upper Clark Fork	14	183	110
Lower Clark Fork	6	172	118
Bitterroot	4	157	120
<u>MISSOURI RIVER DRAINAGE</u>			
Jefferson	14	150	102
Madison	10	148	118
Gallatin	9	133	96
Missouri Main Stem	6	170	100
Judith-Musselshell	2	183	102
Marias-Teton-Sun	2	131	88
Milk (Headwaters)	2	131	88
<u>YELLOWSTONE RIVER DRAINAGE</u>			
Yellowstone (at Big Horn)	14	137	107
Big Horn	37	115	90
Little Big Horn	7	92	60
Tongue	12	96	69
Powder	6	113	77



MONTANA

MOUNTAIN SNOW WATER EQUIVALENT
AS OF
FEBRUARY 1, 1974



M7-0-211388-L

SOIL MOISTURE

DRAINAGE BASIN and/or STATION		Profile (Inches)		Date of Survey	Soil Moisture (Inches)		
Name	Elevation	Depth	Capacity		This Year	Last Year	Average †

COLUMBIA RIVER BASIN

Kootenai

Baree Trail	3800	48	7.5			4.9	-
Murphy Lake R. S.	3000	48	22.6	2/01	20.3	18.9	19.4
Raven	3050	48	23.0			13.9	19.6

Flathead

Desert Mountain	5600	54	8.4	1/31	9.0	6.8	7.0
Marias Pass	5250	54	6.5	1/30	5.8	6.1	5.1

Clark Fork

Black Pine	7100	48	10.0	1/31	8.3	7.0	7.4
Lubrecht Forest	4100	48	26.8	2/01	15.4	15.0	15.2
Seeley Lake R. S.	4030	48	11.9	2/01	10.0	6.6	7.3
Skalkaho Summit	7260	48	10.8			-	-

Bitterroot

Gibbons Pass	7100	48	7.1	1/31	5.5	2.7	4.8
Lolo Pass	5250	48	10.6	2/01	6.9	5.6	6.0

MISSOURI RIVER BASIN

Beaverhead

Lakeview	6700	48	15.3	2/01	17.0	17.3	9.2
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Madison

West Yellowstone	6700	48	6.5	2/01	2.9	2.6	2.7
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Gallatin

Bridger Bowl	7250	48	17.0	1/29	15.2	16.1	16.0
College Site No. 2	4856	54	17.7	1/25	16.6	15.3	12.7
Lick Creek	6860	48	18.8	1/28	14.4	14.1	16.8
Twenty-One Mile	7150	48	10.0	2/01	7.8	6.8	4.6

Missouri Main Stem

Kings Hill	7420	48	11.8	1/30	8.4	8.4	6.7
Stemple Pass	6350	48	5.9	1/30	5.3	3.5	3.9

Milk

Beaver Creek	3950	48	20.9	1/31	7.8	7.4	7.5
Rocky Boy	4700	36	10.1	1/31	9.2	6.0	6.4

Yellowstone

Battle Ridge	6020	48	17.6	1/29	13.9	11.9	12.9
Northeast Entrance	7350	48	9.4	1/31	5.8	7.8	6.2
PMC Dryland	3700	48	20.7	1/28	6.8	-	-

RESERVOIR STORAGE (Thousand Acre Feet) END OF MONTH

Basin or Stream	RESERVOIR	Usable Capacity	Usable Storage		
			This Year	Last Year	Average

COLUMBIA RIVER BASIN

Kootenai	Koocanusa	3,522.0	2,176.0	159.1	-
Flathead	Hungry Horse	3,428.0	2,508.0	2,362.0	2,484.0
	Flathead Lake	1,791.0	1,396.0	1,223.0	1,246.0
	Camas (4)	45.2	14.9	31.5	23.0
	Mission Valley (8)	100.3	42.1	29.9	33.2
Clark Fork	Georgetown Lake	31.0	20.7	26.5	27.0
	Lower Willow Creek	4.6	2.5	0.2	1.2
	Nevada Creek	12.6	-	-	4.8
	Noxon Rapids	334.6	305.6	309.1	320.8
Bitterroot	Como	34.9	-	6.3	11.0
	Painted Rocks	31.7	-	18.0	22.0

MISSOURI RIVER BASIN

Beaverhead	Clark Canyon	328.9	141.6	155.3	140.6
	Lima	84.0	48.7	43.1	31.6
Ruby	Ruby	38.8	26.0	25.2	23.4
Madison	Hebgen Lake	377.5	229.8	253.8	201.5
	Ennis Lake	41.0	35.5	23.1	37.7
Gallatin	Middle Creek	8.0	3.9	2.5	3.3
Missouri	Canyon Ferry	2,043.0	1,664.0	1,458.0	1,639.0
	Hauser & Helena	61.9	62.5	60.7	58.0
	Lake Helena	10.4	10.7	10.0	9.2
	Holter Lake	81.9	80.3	80.8	61.8
	Smith River	10.7	2.6	4.4	5.8
	Bair	7.0	2.2	3.7	4.2
	Martinsdale	23.1	6.5	9.4	7.5
	Deadman's Basin	72.2	33.5	52.3	43.6
	Fort Peck	19,410.0	15,600.0	16,910.0	13,220.0
Sun	Gibson	105.0	27.9	51.7	39.1
	Willow Creek	32.3	19.6	22.3	18.9
	Pishkun	32.0	3.7	18.	17.5
Marias	Lower Two Medicine	16.6	-	-	-
	Four Horns	19.2	-	-	-
	Swift	30.0	10.7	15.4	-
	Lake Frances	112.0	34.4	93.9	78.0
	Tiber	1,347.0	524.8	495.5	577.1
Milk	Fresno	127.2	12.1	81.7	56.2
	Nelson	66.8	19.9	46.7	42.6
	Lake Sherburne	66.1	35.2	12.2	18.5
Yellowstone	Mystic Lake	20.8	12.7	8.7	10.9
	Tongue River	68.0	28.3	27.4	27.8
	Cooney	27.5	12.2	16.1	13.8
Big Horn	Big Horn Lake	1,356.0	939.8	917.4	792.5

STREAMFLOW FORECASTS

BASIN, STREAM and/or FORECAST POINT	THIS YEAR		PAST RECORD	
	FORECAST		THOUSAND ACRE FEET	
	Thousand Acre Feet	Percent of Average	PERIOD	Last Year Average

COLUMBIA RIVER BASIN

KOOTENAI RIVER					
Libby (at)	9,200	115	Apr-Sept	5,498	8,025
	8,200	118	Apr-July	4,724	6,956
KOOTENAI RIVER					
Leonia (at)	10,600	115	Apr-Sept		9,198
	9,400	116	Apr-July		8,072
	7,500	116	Apr-June		6,463
BLACKFOOT RIVER					
Bonner (near)	1,150	114	Apr-Sept	420	1,008
	1,050	115	Apr-July	363	912
	900	114	Apr-June	319	788
CLARK FORK RIVER					
Milltown (above) (4)	850	113	Apr-Sept	298	755
	750	114	Apr-July	254	659
	640	114	Apr-June	221	562
CLARK FORK RIVER					
Missoula (above)	2,000	113	Apr-Sept	718	1,763
	1,800	114	Apr-July	617	1,572
	1,550	115	Apr-June	540	1,350
BITTERROOT RIVER					
Darby (near)	680	122	Apr-Sept	301	558
	640	124	Apr-July	266	517
	560	124	Apr-June	239	453
BITTERROOT RIVER					
Missoula (at) (6)	1,700	116	Apr-Sept		1,466
	1,600	118	Apr-July		1,360
	1,385	118	Apr-June		1,175
CLARK FORK RIVER					
Missoula (below)	3,700	115	Apr-Sept		3,229
	3,400	116	Apr-July		2,932
	2,930	116	Apr-June		2,525
CLARK FORK RIVER					
St. Regis (at)	5,200	118	Apr-Sept	1,809	4,398
	4,700	118	Apr-July	1,564	3,993
	4,100	119	Apr-June	1,367	3,451
NORTH FORK FLATHEAD RIVER					
Columbia Falls (near)	2,200	109	Apr-Sept		2,023
	2,000	108	Apr-July		1,846
	1,700	109	Apr-June		1,562

(4) Difference in observed flow Clark Fork above Missoula and Blackfoot near Bonner.

(6) Difference in observed flow Clark Fork above and below Missoula.

Note: 1953-67 average. Current average not yet available.

Financial Statement

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This statement is prepared for the purpose of showing the financial condition of the company at the close of the year. It is not intended to be a statement of the company's affairs, but a statement of the company's financial condition. It is not intended to be a statement of the company's affairs, but a statement of the company's financial condition.

STREAMFLOW FORECASTS

BASIN, STREAM and/or FORECAST POINT	THIS YEAR			PAST RECORD	
	FORECAST		FORECAST PERIOD	THOUSAND ACRE FEET	
	Thousand Acre Feet	Percent of Average		Last Year	Average
MIDDLE FORK FLATHEAD RIVER					
West Glacier (near)	2,000	104	Apr-Sept	1,324	1,931
	1,850	103	Apr-July	1,222	1,791
	1,570	103	Apr-June	1,061	1,521
SOUTH FORK FLATHEAD RIVER					
Columbia Falls (near)(7)	2,500	106	Apr-Sept	1,450	2,358
	2,350	105	Apr-July	1,374	2,235
	2,050	104	Apr-June	1,248	1,967
FLATHEAD RIVER					
Columbia Falls (at)(7)	6,800	105	Apr-Sept	4,164	6,467
	6,400	107	Apr-July	3,875	6,003
	5,500	107	Apr-June	3,435	5,155
FLATHEAD RIVER					
Polson (near)(8)	8,300	108	Apr-Sept	4,678	7,701
	7,600	106	Apr-July	4,430	7,157
	6,500	106	Apr-June	3,910	6,122
CLARK FORK RIVER					
Plains (near)(8)	14,000	112	Apr-Sept	6,703	12,482
	12,800	112	Apr-July	6,104	11,448
	11,000	112	Apr-June	5,354	9,802
CLARK FORK RIVER					
Whitehorse Rapids (at)(9)	15,700	112	Apr-Sept		13,987
	14,400	113	Apr-July		12,787
	12,200	111	Apr-June		10,953

(7) Adjusted for storage in Hungry Horse Reservoir.

(8) Adjusted for storage in Hungry Horse Reservoir and Flathead Lake.

(9) Adjusted for storage in Hungry Horse, Flathead Lake and Noxon Rapids Reservoirs.

Note: 1953-67 average. Current average not yet available.

STREAMFLOW FORECASTS

BASIN, STREAM and/or FORECAST POINT	THIS YEAR			PAST RECORD	
	FORECAST		FORECAST PERIOD	THOUSAND ACRE FEET	
	Thousand Acre Feet	Percent of Average		Last Year	Average

MISSOURI RIVER BASIN

BEAVERHEAD RIVER					
Grant (near)(11)(12)	115	108	Apr-Sept	133	106
	98	109	Apr-July	114	90
RUBY RIVER					
Alder (near)	84	105	Apr-Sept		80
	70	104	Apr-July		67
BIG HOLE RIVER					
Melrose (near)	720	104	Apr-Sept		690
	670	104	Apr-July		642
JEFFERSON RIVER					
Silver Star (at)	860	100	Apr-Sept		863
	770	100	Apr-July		770
MADISON RIVER					
Grayling (near)(13)	470	109	Apr-Sept	440	430
	370	110	Apr-July	335	337
MADISON RIVER					
McAllister (near)(14)	800	109	Apr-Sept		734
	640	109	Apr-July		587
GALLATIN RIVER					
Gateway (near)	480	104	Apr-Sept		461
	415	106	Apr-July		393
GALLATIN RIVER					
Logan (at)	510	108	Apr-Sept		473
	430	107	Apr-July		401
MISSOURI RIVER					
Toston (at)(16)	2,200	104	Apr-Sept	1,804	2,105
	1,930	105	Apr-July	1,431	1,836

(11) Adjusted for storage in Lima Reservoir.

(12) Adjusted for storage in Clark Canyon Reservoir.

(13) Adjusted for storage in Hebgen Lake.

(14) Adjusted for storage in Hebgen and Ennis Lakes.

(16) Adjusted for storage in Hebgen and Ennis Lakes and Clark Canyon Reservoir.

Note: 1953-67 average. Current average not yet available.

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UNIT - 1

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STREAMFLOW FORECASTS

BASIN, STREAM and/or FORECAST POINT	THIS YEAR			PAST RECORD	
	FORECAST		FORECAST PERIOD	THOUSAND ACRE FEET	
	Thousand Acre Feet	Percent of Average		Last Year	Average
SUN RIVER					
Gibson Dam (at)(17)	605	100	Apr-Sept	285	604
	560	101	Apr-July	258	555
MISSOURI RIVER					
Fort Benton (at)(18)	3,100	93	Apr-Sept		3,321
	2,700	95	Apr-July		2,834
MARIAS RIVER					
Shelby (near)(20)	550	91	Apr-Sept		604
	530	91	Apr-July		581
MISSOURI RIVER					
Virgelle (at)(21)	3,800	94	Apr-Sept		4,036
	3,300	94	Apr-July		3,511
MISSOURI RIVER					
Landusky (near)(21)	4,150	93	Apr-Sept		4,484
	3,600	92	Apr-July		3,889
MISSOURI RIVER					
Fort Peck Dam (below)(22)	3,950	92	Apr-Sept		4,312
	3,500	92	Apr-July		3,824
MISSOURI RIVER					
Wolf Point (near)(22)	4,300	92	Apr-Sept		4,683
	3,800	91	Apr-July		4,168
MISSOURI RIVER					
Williston, N.D. (near)(29)	10,400	95	Apr-Sept		10,998
	9,300	95	Apr-July		9,823

- (17) Adjusted for storage in Gibson Reservoir and diversions.
 (18) Adjusted for storage in Canyon Ferry Reservoir.
 (20) Adjusted for storage in Two Medicine, Four Horns, Lake Frances and Swift Reservoirs.
 (21) Adjusted for storage in Canyon Ferry and Tiber Reservoirs.
 (22) Adjusted for storage in Canyon Ferry, Tiber and Fort Peck Reservoirs.
 (29) Adjusted for storage in Canyon Ferry, Tiber, Fort Peck, Buffalo Bill, Boyesen and Yellowtail Reservoirs. Sum Yellowstone River near Sidney and Missouri River near Culbertson.

Note: 1953-67 average. Current average not yet available.

Item	Quantity	Unit	Price	Total
1	100	kg	1.50	150.00
2	50	kg	2.00	100.00
3	20	kg	3.00	60.00
4	10	kg	4.00	40.00
5	5	kg	5.00	25.00
6	2	kg	6.00	12.00
7	1	kg	7.00	7.00
8	1	kg	8.00	8.00
9	1	kg	9.00	9.00
10	1	kg	10.00	10.00

STREAMFLOW FORECASTS

BASIN, STREAM and/or FORECAST POINT	THIS YEAR			PAST RECORD	
	FORECAST		FORECAST PERIOD	THOUSAND ACRE FEET	
	Thousand Acre Feet	Percent of Average		Last Year	Average

YELLOWSTONE RIVER BASIN

YELLOWSTONE RIVER					
Corwin Springs (at)	2,030	108	Apr-Sept	1,485	1,880
	1,700	108	Apr-July	1,231	1,575
YELLOWSTONE RIVER					
Livingston (near)	2,280	107	Apr-Sept		2,122
	1,900	108	Apr-July		1,769
BOULDER RIVER					
Big Timber (at)	350	101	Apr-Sept		347
	330	101	Apr-July		327
STILLWATER RIVER					
Absarokee (near)(25)	560	100	Apr-Sept		558
	480	101	Apr-July		474
CLARKS FORK RIVER					
Belfry (near)	600	103	Apr-Sept		582
	550	104	Apr-July		530
ROCK CREEK					
Red Lodge (near)	114	108	Apr-Sept	80.6	106
	90	110	Apr-July	55.3	82.1
YELLOWSTONE RIVER					
Billings (at)	4,100	104	Apr-Sept	3,588	3,944
	3,550	104	Apr-July	2,994	3,400
BIG HORN RIVER					
St. Xavier (near)(26)	1,800	105	Apr-Sept		1,719
	1,700	105	Apr-July		1,625
YELLOWSTONE RIVER					
Miles City (at)(27)	5,900	101	Apr-Sept		5,850
	5,300	102	Apr-July		5,177
YELLOWSTONE RIVER					
Sidney (near)(27)	6,100	101	Apr-Sept		6,069
	5,500	101	Apr-July		5,454

(25) Adjusted for storage in Mystic Lake.

(26) Adjusted for storage in Buffalo Bill, Boysen, Bull Lake and Yellowtail Reservoirs.

(27) Adjusted for storage in Buffalo Bill, Boysen and Yellowtail Reservoirs.

Note: 1953-67 average. Current average not yet available.

SNOW

DRAINAGE BASIN and/or SNOW COURSE		THIS YEAR			PAST RECORD	
		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Elevation				Last Year	Average
ARCH FALLS	7350	1/28	32	8.2	6.0	8.7
BATTLE RIDGE	6020	1/29	21	6.2	-	-
BEAR PAW SKI AREA	5200	1/31	18	3.9	1.2	4.7
BIG COULEE	5100	2/01	17	4.3	-	-
BIG SPRINGS (ID)	6500	1/30	62	18.2	11.8	14.4
BLACK CANYON (ID)	7850	1/27	89	28.5	18.8	24.3
BLACK MOOSE (ID)	8120	1/27	103	35.7	22.0	25.4
BLACK PINE	7100	1/31	46	12.6	7.3	7.6
BLACK PINE PILLOW	7100	1/31	SP	10.7	6.6	9.4
BOW RIVER #1 (AL)	5100	1/31	38	7.3	6.5	6.5
BRIDGER BOWL	7250	1/29	66	20.0	13.5	20.4
BRIDGER BOWL PILLOW	7250	1/29	SP	19.7	12.0	18.9
CAMP CREEK (ID)	6800	1/30	26	6.9	6.0	7.4
CANYON (WY)	7750	1/31	46	10.8	9.1	10.7
CHATEAU LAWN #8 (AL)	5700	1/30	48	11.0	8.2	7.3
CHESSMAN RESERVOIR	6200	1/29	6	1.4	1.7	2.5
COMBINATION	5600	1/31	22	6.0	2.8	5.6
COMBINATION PILLOW	5600	1/31	SP	5.0	2.8	-
COOKE STATION	8150	1/31	59	15.2	10.7	-
COPPER MOUNTAIN	7700	1/31	35	9.3	5.6	8.0
COYOTE HILL	4200	2/01	42	8.6	4.2	8.3
DEADMAN CREEK	6450	1/30	35	8.2	4.8	8.1
DEADMAN CREEK PILLOW	6450	1/30	SP	8.1	4.3	8.1
DESERT MOUNTAIN	5600	1/31	55	14.6	9.1	11.9
DEVILS SLIDE	8100	1/28	58	15.2	10.7	15.3
FISHER CREEK	9100	1/31	116	33.1	20.3	24.8
FISHER CREEK PILLOW	9100	1/31	SP	30.4	19.0	25.5
FLEECER RIDGE	6600	2/01	42	7.4	-	-
FROHNER MEADOWS	6480	2/01	28	7.1	3.6	-
FROHNER MEADOWS PILLOW	6480	2/01	SP	6.6	4.3	-
GIBBONS PASS	7100	1/30	72	19.7	12.8	16.0
GRIZZLY PEAK	8400	2/01	26	6.2	10.0	11.6
HEART LAKE TRAIL	4800	1/29	65	19.1	7.2	17.6
HERGEN DAM	6550	1/30	39	9.8	7.3	8.2
HELL ROARING DIVIDE	5770	2/01	105	34.1	20.7	23.3
HIGHWOOD DIVIDE	5650	2/01	30	8.1	-	-
HIGHWOOD STATION	4600	2/01	9	2.2	-	-
HOOD MEADOW	6600	1/28	24	6.4	6.4	7.9
HOODOO BASIN	6000	1/29	128	46.0	28.8	37.9
HOODOO CREEK	5900	1/29	125	41.9	26.4	35.5
HUDSON BAY DIVIDE	5800	1/30	46	11.1	9.9	12.0
INTERGAARD	6450	2/01	30	9.4	3.1	5.9
ISLAND PARK (ID)	6310	1/30	51	13.3	8.6	11.6
KING CREEK SADDLE	4550	1/31	0	.0	.0	-
KING SPRINGS	4150	1/31	0	.0	.0	-
KIWANIS CAMP	3720	1/31	1	.1	.0	-
LAKE CAMP (WY)	7850	1/31	31	6.6	4.8	6.0
LAKE CREEK	6100	1/29	26	6.0	4.8	4.9
LAKEVIEW CANYON	6950	1/31	28	7.6	4.5	9.8
LAKEVIEW RIDGE	7400	1/31	23	7.0	4.8	8.8
LATHAM SPRINGS (ID)	7650	1/27	87	28.0	19.0	24.0
LICK CREEK	6860	1/28	17	4.5	5.7	6.8

Average based On 1958-72 period. A - Aerial observation; water content estimated.

SP - Snow Pillow observation; water content only.

SNOW

DRAINAGE BASIN and/or SNOW COURSE		THIS YEAR			PAST RECORD	
		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Elevation				Last Year	Average
LICK CREEK PILLOW	6860	1/28	SP	3.6	4.5	6.1
LOLO PASS (ID)	5230	1/30	97	26.2	16.5	22.9
LOOKOUT (ID)	5250	1/31	115	32.0	16.7	26.7
LUBRECHT FLUME	4800	1/30	24	6.0	2.7	5.6
LUBRECHT FLUME PILLOW	4800	1/30	SP	3.2	2.5	4.5
LUBRECHT FOREST # 3	5450	1/29	20	4.8	3.2	5.6
LUBRECHT FOREST # 4	4650	1/29	10	2.5	1.3	3.2
LUBRECHT FOREST # 6	4040	1/29	15	4.1	1.2	3.8
LUBRECHT HYDROPLOT	4200	1/30	22	6.1	2.5	5.1
LUPINE CREEK (WY)	7300	1/31	36	8.2	6.5	7.7
MADISON PLATEAU	7750	1/30	62	19.0	11.6	15.4
MADISON PLATEAU PILLOW	7750	1/30	SP	19.8	11.7	16.6
MARIAS PASS	5250	1/31	45	10.6	6.7	13.2
MAYNARD CREEK	6210	1/29	43	12.0	9.5	13.7
MAYNARD CREEK PILLOW	6210	1/29	SP	6.6	3.7	8.8
MIRROR LAKE #6 (AL)	6600	1/30	44	10.7	7.6	8.4
MOOSE CREEK (ID)	6200	1/30	55	15.2	9.9	11.8
MT. EISENHOWER #10 (AL)	5000	1/31	29	5.8	4.0	4.1
NEW WORLD	6900	1/29	33	9.8	8.4	10.2
NEZ PERCE CREEK	6500	1/31	28	6.6	3.6	5.4
NORRIS BASIN (WY)	7500	2/03	35	8.7	6.8	8.0
NORTHEAST ENTRANCE	7400	1/31	29	6.5	6.4	6.6
NORTHEAST ENTRANCE PILL.	7400	1/31	0	6.1	5.3	7.0
PETERSON MEADOWS	7200	1/28	28	5.7	4.1	-
PETERSON MEADOWS PILLOW	7200	1/27	SP	6.8	4.6	-
PICNIC GROUNDS	6200	1/31	18	4.9	1.6	-
PIPESTONE PASS	7200	2/01	12	3.3	2.0	3.8
PIPESTONE UPPER #2 (AL)	5300	1/31	36	7.9	5.2	6.3
ROCKER PEAK	8000	1/31	47	11.4	6.7	11.1
ROCKER PEAK PILLOW	8000	1/31	SP	11.2	6.7	11.4
ROCKY BOY	4700	1/31	12	2.9	.0	3.4
ROCKY BOY PILLOW	4700	1/31	SP	2.2	.8	3.8
SADDLE MOUNTAIN	7940	1/31	77	22.0	13.7	18.4
SADDLE MOUNTAIN PILLOW	7940	1/30	SP	22.3	14.1	19.1
SHOWER FALLS	8100	1/28	69	18.5	13.0	18.4
SHOWER FALLS PILLOW	8100	1/28	SP	15.7	11.8	16.7
SPUR PARK	8000	1/30	61	17.1	9.0	16.7
STORM LAKE	7780	1/28	34	9.0	6.0	9.5
SUCKER CREEK	3960	1/31	2	.2	.0	-
SYLVAN PASS (WY)	7100	1/30	43	11.2	7.6	9.4
TARGHEE PASS (ID)	7000	1/30	37	8.7	6.0	12.0
TAYLOR ROAD	4080	1/31	2	.2	.0	-
TEN MILE LOWER	6600	1/30	30	5.6	3.6	5.4
TEN MILE MIDDLE	6800	1/30	40	8.6	5.1	8.2
TEN MILE UPPER	8000	1/30	40	10.4	5.6	10.1
TEPEE CREEK	8000	1/29	46	11.4	7.6	11.7
TEPEE CREEK PILLOW	8000	1/29	SP	10.1	7.0	-
THUMB DIVIDE (WY)	7900	1/29	57	15.8	9.6	15.4
TV MOUNTAIN	6800	1/31	65	16.4	9.8	13.2

Average based On 1958-72 period. A - Aerial observation; water content estimated.

SP - Snow Pillow observation; water content only.

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SNOW

DRAINAGE BASIN and/or SNOW COURSE		THIS YEAR			PAST RECORD	
		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Elevation				Last Year	Average

TWENTY-ONE MILE	7150	1/31	60	15.6	9.6	12.7
UNCLE SAM GULCH	6500	1/31	27	7.0	-	-
VALLEY VIEW (ID)	6500	1/30	38	10.2	6.3	12.3
WEST YELLOWSTONE	6700	1/31	42	10.3	6.8	8.2
WEST YELLOWSTONE PILLOW	6700	2/01	SP	7.3	4.8	6.6
WHISKEY CREEK	6800	1/30	60	17.6	10.6	-
WHISKEY CREEK PILLOW	6800	1/30	SP	14.3	9.1	-
WHITE ELEPHANT (ID)	7700	1/30	74	23.5	11.6	-
WHITE MILL	8700	1/31	88	24.0	14.8	-
WHITE MILL PILLOW	8700	1/31	SP	20.2	-	-
WOLVERINE (WY)	7650	1/31	37	8.6	6.8	-

LATE ARRIVING DATA

Dix Hill	6400	2/01	32	8.0	-	-
Kilgore (ID)	6200	2/01	27	8.3	7.5	7.9
Mount Lockhart	6400	2/04	78	20.6	-	-
Mount Lockhart Pillow	6400	2/04	SP	18.4	8.0	15.6
North Fork Elk Creek	6250	1/06	44	10.4	6.0	8.6
North Fork Elk Creek Pillow	6250	1/06	SP	10.0	6.1	8.4
Ophir Park	7150	2/01	51	14.0	-	-
Picket Pin Lower	6200	2/02	0	0.0	1.8	-
Picket Pin Middle	7250	2/02	19	5.8	6.1	-
Picket Pin Upper	8100	2/02	44	12.4	11.1	-
Spur Park	8100	1/30	61	17.1	9.0	16.7
Spur Park Pillow	8100	1/30	SP	16.3	9.6	16.4
Waldron	5600	2/04	39	8.4	-	-
Waldron Pillow	5600	2/04	SP	10.2	5.7	9.9

DELAYED DATA

Badger Pass	6900				20.5	36.3
Blue Lake	5900				12.5	20.1
Holbrook	4530				2.5	8.0
Spotted Bear Mountain	7000				8.5	11.4
Twelvemile Creek	5600				9.4	15.6
Twelvemile Creek Pillow	5600				7.3	13.4
Twin Creeks	3580				2.5	9.8

Average based On 1958-72 period. A - Aerial observation; water content estimated.

SP - Snow Pillow observation; water content only.

INDEX to MONTANA SNOW COURSES and SOIL MOISTURE STATIONS

NEW COURSES

COLUMBIA RIVER BASIN

Drainage Basin
& Snow Course

Number

Elev.

Sec.

Top.

Range

Record
Begin

Measuring
Dates 1/

Mean,
By 2/

Drainage Basin
& Snow Course

Number

Elev.

Sec.

Top.

Range

Record
Begin

Measuring
Dates 1/

Mean,
By 2/

SOIL MOISTURE STATIONS

COLUMBIA RIVER BASIN

MISSOURI RIVER BASIN

MISSOURI RIVER MAIN STEM

MISSOURI RIVER BASIN

MISSOURI RIVER MAIN STEM

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Agencies and Organizations Cooperating in Montana Snow Surveys

GOVERNMENT AGENCIES

Canada:

Water Survey of Canada, Calgary, Department of the
Environment
Water Resources Service, Department of Lands, Forests
and Water Resources, British Columbia

Federal:

Department of the Army
Corps of Engineers
U.S. Department of Agriculture
Forest Service
Soil Conservation Service
U.S. Department of Commerce
NOAA, National Weather Service
U.S. Department of the Interior
Bonneville Power Administration
Bureau of Indian Affairs
Bureau of Reclamation
Bureau of Sports Fisheries and Wildlife
Geological Survey
National Park Service

STATE

Montana Association of Conservation Districts
Montana Department of Fish and Game
Montana Department of Natural Resources and
Conservation
Montana Water Resources Board
Montana State University - Agricultural Experiment
Station
North Montana Branch Station - Agricultural Exper-
iment Station
University of Montana - School of Forestry

PRIVATE

Montana Power Company

Other organizations and individuals furnish valuable
information for snow survey reports. Their cooperation
is gratefully acknowledged.

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SOIL CONSERVATION SERVICE

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water supply for irrigation,
domestic and municipal water
supply, hydro-electric power
generation, navigation,
mining and industry

*"The Conservation of Water begins
with the Snow Survey"*